

We claim:

- 1 1. A method of data transmission comprising the steps of:
 2 dividing a data packet into a plurality of data sub-packets;
 3 transmitting a first control information associated with one of the plurality of
 4 data sub-packets over a time slot x of a control channel; and
 5 transmitting the associated one of the plurality of data sub-packets over a time
 6 slot y of a data channel.
- 1 2. The method of claim 1, wherein the first control information indicates a manner of
 2 decoding the associated one of the plurality of data sub-packets.
- 1 3. The method of claim 1 comprising the additional step of:
 2 channel coding the data packet prior to the step of dividing the data packet into
 3 the plurality of data sub-packets.
- 1 4. The method of claim 1 comprising the additional step of:
 2 channel coding the associated one of the plurality data sub-packets prior to the
 3 step of transmitting the associated one of the plurality of data sub-packets.
- 1 5. The method of claim 1, wherein the time slot x of the control channel and the time slot y
 2 of the data channel are time synchronized to each other.
- 1 6. The method of claim 1, wherein time slot x-z of the control channel and the time slot y of
 2 the data channel are time synchronized to each other and z is an integer.
- 1 7. The method of claim 1, wherein the time slot x of the control channel and the time slot y
 2 of the data channel are not time synchronized to each other and the control information
 3 includes an indication of the associated one of the plurality of data sub-packets.
- 1 8. The method of claim 1 comprising the additional step of:
 2 transmitting a second control information associated with a second of the
 3 plurality of data sub-packets over a time slot x+1 of the control channel; and

- 4 transmitting the associated second of the plurality of data sub-packets over a
5 time slot $y+1$ of the data channel.
- 1 9. The method of claim 8, wherein the first and second control information are identical.
- 1 10. The method of claim 8, wherein the second control information indicates a manner of
2 decoding the associated second of the plurality of data sub-packets.
- 1 11. The method of claim 1 comprising the additional step of:
2 transmitting the first control information over a time slot p of another control
3 channel.
- 1 12. The method of claim 1, wherein the time slot x of the control channel and the time slot p
2 of the other control channel are time synchronized to each other.
- 1 13. The method of claim 1, wherein the first control information includes a new/continuation
2 flag to indicate whether the associated one of the plurality data sub-packets is a
3 beginning of a new data packet transmission or a continuation of a data packet
4 transmission in progress.
- 1 14. The method of claim 1, wherein the first control information includes a sequence
2 identifier to indicate a sequence of the associated one of the plurality data sub-packets.
- 1 15. The method of claim 1, wherein the first control information includes a user identifier to
2 indicate a user to whom the associated one of the plurality of data sub-packets is
3 intended.
- 1 16. The method of claim 1, wherein the first control information is channel coded prior
2 transmission.
- 1 17. The method of claim 1 comprising the additional step of:
2 transmitting user specific flags over a time slot q of a user identity channel to
3 indicate one or more users to whom the associated one of the plurality of data sub-
4 packets is intended.

1 18. The method of claim 1, wherein user specific flags associated with users to whom the
 2 one of the plurality of data sub-packets are intended are set to one and user specific flags
 3 associated with users to whom the one of the plurality of data sub-packets are not
 4 intended are set to zero.

1 19. The method of claim 1, wherein the user specific flags associated with users to whom the
 2 associated one of the plurality of data sub-packets are intended are turned on or set to
 3 one and transmitted when the associated one of the plurality of data sub-packets is a first
 4 data sub-packet or a last sub-packet of the data packet.

1 20. The method of claim 19, wherein the user specific flag is an in-phase signal when the
 2 associated one of the plurality of data sub-packets is the first data sub-packet and a
 3 quadrature signal when the associated one of the plurality of data sub-packets is the last
 4 sub-packet of the data packet.

1 21. The method of claim 1, wherein the control channel is power controlled.

1 22. The method of claim 21 comprising the additional step of:
 2 receiving control channel quality feedback from a receiver to which the data
 3 packet is intended.

1 23. A transmitter comprising of:
 2 means for dividing a data packet into a plurality of data sub-packets;
 3 means for transmitting a first control information associated with one of the
 4 plurality of data sub-packets over a time slot x of a control channel; and
 5 means for transmitting the associated one of the plurality of data sub-packets
 6 over a time slot y of a data channel.

1 24. The transmitter of claim 22 further comprising of:
 2 means for channel coding the data packet or the plurality of data sub-packets.

1 25. The transmitter of claim 22 further comprising of:
 2 means for transmitting a second control information associated with a second of
 3 the plurality of data sub-packets over a time slot $x+1$ of the control channel; and

4 means for transmitting the associated second of the plurality of data sub-packets
5 over a time slot $y+1$ of the data channel.

1 26. The transmitter of claim 25, wherein the first and second control information are
2 identical.

1 27. The transmitter of claim 23 further comprising of:
2 means for transmitting a new/continuation flag in a time slot q of a new/continue
3 channel to indicate whether the associated one of the plurality data sub-packets is a
4 beginning of a new data packet transmission or a continuation of a data packet
5 transmission in progress.

1 28. The transmitter of claim 23 further comprising of:
2 means for transmitting a sequence identifier in a time slot q of a communication
3 channel parallel to the data or control channel to indicate a sequence of the associated
4 one of the plurality data sub-packets.

1 29. The transmitter of claim 22 further comprising of:
2 means for channel coding the first control information.

1 30. The transmitter of claim 22 further comprising of:
2 means for transmitting user specific flags over a time slot q of a user identity
3 channel to indicate one or more users to whom the associated one of the plurality of data
4 sub-packets is intended.

1 31. The transmitter of claim 22, wherein the transmitter is a base station belonging to a
2 wireless communication system.

1 32. The transmitter of claim 22 further comprising of:
2 means for adjusting a power of the means for transmitting the first control
3 information over the control channel.

1 33. The transmitter of claim 32 further comprising of:
2 means for receiving control channel quality feedback.